



HP Valves Oldenzaal BV

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The Netherlands

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E-mail info@hpvalves.com

COVERPAGE TO INSPECTION / TEST CERTIFICATE

Medium & high-pressure valves in
accordance with ASME, API, BS & DIN

Customer : CMI (HRSG + Energy Services)
Project : Yajva SBV
Customer P/O no : 203/2010/900588
Shop order no : 2010 0006
Item no : 182 / 000
Quantity : 10 pcs

KKS No :
15HAH10AA112 15LBA10AA118 SPARE VALVES
15HAH10AA113 15LBA10AA119 SPARE VALVES
15HAH10AA114 15LBA10AA120
15HAH10AA115 15LBA10AA121

Bank ABN-AMRO SWIFT-address ABNANL2A
EUR-account 59.55.41.437 IBAN-code NL88ABNA0595541437
USD-account 57.60.74.780
Trade register Enschede 060.567.50
VAT no NL 008671242B01

Member of Indutrade AB



TEST / INSPECTION CERTIFICATE

(EN 10204-3.1)

Client : HP VALVES

KEY VALVE TECHNOLOGIES LTD.

P.O. No. : P10 0043 / 2010 0006

Report No. : TIC100614-01-11

Date of Issue : 2010. 06. 14

Item Description : P.S.G. VALVE(MOV, SW ENDS)			CLASS :2500		MATERIAL : (S)A182-F91		
Serial No.	SN1000024~33	Size	1"	Q'ty	10	Sets	

HYDRAULIC / PNEUMATIC TEST

Hydraulic Test	Shell :	647 Barg	Pneumatic Test	Shell :	N/A	Barg
	Seat :	474 Barg		Seat :	N/A	Barg

Dimension Inspection	GOOD	Visual Inspection	GOOD	Function Test	GOOD
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MATERIAL SPECIFICATION

Product Name	Material	ASTM	Heat No.	Code Marking	Remarks
Body	Forged Alloy Steel	(S)A182-F91	A03669	JY6	
Bonnet	Forged Alloy Steel	(S)A182-F91	A12209		
Seat Ring	Forged Alloy Steel	F91+HF			Stellite #12
Disc	Forged Alloy Steel	F91+HF			Stellite #6
Stem	Stainless Steel	A276-431			
		-BLANK-			

CHEMICAL COMPOSITION

Element	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Al	V	Nb	N
Heat No.	min.	0.08	0.20	0.30	-	-	8.00	0.85	-	-	0.180	0.060	0.03
	max.	0.12	0.50	0.60	0.020	0.010	0.40	9.50	1.05	0.04	0.250	0.100	0.07
A03669	0.090	0.306	0.388	0.010	0.001	0.221	8.43	0.96	0.05	0.009	0.192	0.067	0.035
A12209	0.097	0.296	0.389	0.015	0.002	0.162	8.694	0.908	0.117	0.011	0.201	0.099	0.040
						-BLANK-							

MECHANICAL PROPERTIES

Item	Tensile Strength min(Mpa)	Yield Strength min(Mpa)	Elongation min(%)	Reduction of Area min(%)	Hardness max(HB)	Remarks
S.T.D	585.0	415.0	20.0	40.0	248.0	
A03669	620.5	489.5	31.0	53.0	223.0	
A12209	751.5	634.3	24.0	66.0	229.0	
			-BLANK-			

Notes 1. These Standards for inspection conform to ASME B16.34 / API-598

2. Hydrostatic test : Shell-holding time(15 sec), Seat-Holding time(15sec, leakage rate) 2010 0006 Pos: 102/000

We here by certify that the result mentioned above are true correct in every detail.


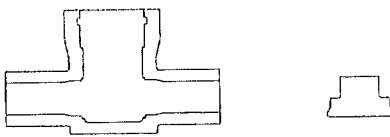
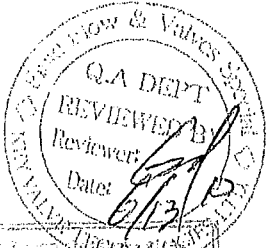
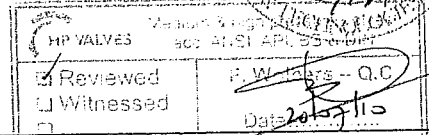
Prepared by

Reviewed by Q.A. Manager

Reviewed
Witnessed
Date: 2010/06/14


F. Wolkers - Q.C
Date: 2010/06/14

HP VALVES
Medium & high pressure valves
acc. ANSI, API, BS & DIN
Your ref.: 203/2010/1900588
Our ref.: 2010 0006
Qty.: 10 pcs

 (주) 지.티.에스 Global Technology Service Co., Ltd.	자분탐상검사보고서 <i>Report of Magnetic Particle Examination</i>		보고서번호 Report No.	G10M-KVT-0006-01	
	650-8 1-dong Sangnok-gu Ansan-si Gyeonggi-do, Korea 경기도 안산시 상록구 이동 650-8 TEL: (031) 433-3861~2, FAX: (031) 433-3868		쪽 번호 Page No.	1 of 2	
발 주 처 Customer	HP VALVES		제 작 자 Manufacturer	KVT	
제품명 / 번호 Item Name/No.	BODY & BONNET (All Surfaces)		공사명 / 번호 Project Name/No.	Yajvinskaya CCPP	
재 질 / 두께 Material/Thickness	See Next Page - <input type="checkbox"/> mm <input type="checkbox"/> in.		Serial No.	See Next Page	
전 처 리 Surface Preparation	SOLVENT CLEANING		표 면 상 태 Surface Condition	<input type="checkbox"/> As Welded <input type="checkbox"/> As Machined <input checked="" type="checkbox"/> As Forged <input type="checkbox"/> As Casted	
감 사 방 법 Examination Method	<input checked="" type="checkbox"/> 연속법(Continuous) <input type="checkbox"/> 잔류법(Residual)		시 험 온 도 Surface Temperature	22 <input checked="" type="checkbox"/> °C <input type="checkbox"/> °F	
자분종류 / 적용방법 Magnetic Particle / Application	제조사(Maker): NAWOO 형 식(Model): 14-AM 제조번호(Batch No.): 05MPB06		자 화 방 법 Magnetization Technique	<input checked="" type="checkbox"/> Yoke <input type="checkbox"/> Prod <input type="checkbox"/> Coil <input type="checkbox"/> Head Shot	
	종류 (Type)			극 간 거 리 Pole Spacing:	
	<input type="checkbox"/> 염색(Color) <input checked="" type="checkbox"/> 형광(Fluorescent) <input checked="" type="checkbox"/> 습식(Wet) <input type="checkbox"/> 건식(Dry)			3~6 <input type="checkbox"/> mm <input checked="" type="checkbox"/> in.	
	적용방법(Application)			자화전류 (Magnetizing Current)	
	<input checked="" type="checkbox"/> 분사(Spray) <input type="checkbox"/> 흘림(Flowing) <input type="checkbox"/> 침적(Immerse)		자 화 장 비 Magnetization Equipment	<input checked="" type="checkbox"/> 교류(AC) <input type="checkbox"/> 직류(DC) Ampere	
탈 자 Demagnetization	<input type="checkbox"/> 유(Yes) <input checked="" type="checkbox"/> 무(No)		자 화 방 향 Magnetization Direction	<input checked="" type="checkbox"/> 선형(Longitudinal) <input type="checkbox"/> 원형(Circular)	
자 외 선 등 Black Light	형 식 Model	UV-100	육안관찰등 Visible Light	형 식 Model	N/A
	일련번호 Serial No	NW0147	<input type="checkbox"/> 주 변 등 Ambient Light	일련번호 Serial No.	N/A
	강 도 Intensity	1250 $\mu W/cm^2$	<input type="checkbox"/> 보 조 등 Glow Lamp	강 도 Intensity	N/A Lux
총 검 사 수 량 Examination Q'ty	30 SETS		검 사 시 기 Examination Time	<input type="checkbox"/> 열처리 전(Before PWHT) <input checked="" type="checkbox"/> 열처리 후(After PWHT)	
적 용 규 격 Code/Standard/Spec.	ASME B16.34 APPENDIX II/ GTS-QP-MA-02 Rev.4				
도 면 Sketch <div style="text-align: center;">  BODY BONNET </div>					
검 사 자 Examined & Interpreted by LEVEL II M. S. YUN			<input type="checkbox"/> Witnessed by <input type="checkbox"/> Reviewed by <div style="text-align: center;">   </div>		



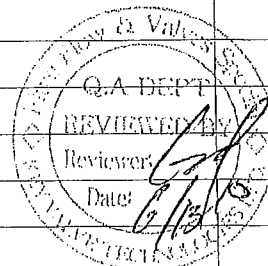
1650-8 I-dong Sangnok-gu Ansan-si Gyeonggi-do,
경기도 안산시 상록구 이동 650-8 TEL:031)433-3861~2, Fax:031)433-3861


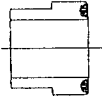
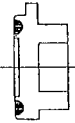

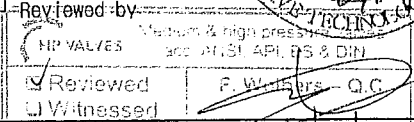


Date of Exam: _____

2010.05.27

HP VALVES	Assemble for high pressure valves BSC ANGEL API BS & DIN
<input checked="" type="checkbox"/> Reviewed	F. Walters - Q.C.
<input type="checkbox"/> Witnessed	
<input type="checkbox"/>	2015/11/10



 (주) 지.티.에스 Global Technology Service Co., Ltd.	침투탐상검사보고서 <i>Report of Liquid Penetrant Examination</i>		보고서번호 Report No.	G10P-KVT-0006-01
			쪽 번호 Page No.	1 of 2
		검사일자 Date of		2010. 05. 27
발 주 처 Customer	HP VALVE		제 작 자 Manufacturer	KVT
제품명 / 번호 Item Name/No.	DISC / SEAT RING		공사명 / 번호 Project Name/No.	Yajvinskaya CCPP
재 질 / 두께 Material/Thickness	- / - <input type="checkbox"/> mm <input type="checkbox"/> in.		Tag No.	See Next Page
전 처 리 Surface Preparation	N/A		표 면 상 태 Surface Condition	<input type="checkbox"/> As Welded <input type="checkbox"/> As Formed <input checked="" type="checkbox"/> Hard Facing <input type="checkbox"/> As Casted
침 투 제 Penetrant Type	<input checked="" type="checkbox"/> 염색(Color) <input type="checkbox"/> 형광(Fluorescent)		시 험 온 도 Surface Temperature	15 <input checked="" type="checkbox"/> °C <input type="checkbox"/> °F
침투제(Penetrant) 제조사(Maker): NAWOO 형식(Model): NPP-2 제조번호(Batch No.): 05NPP06 종류(Type): 적용방법(Application) <input type="checkbox"/> 수세성 (W/W) <input checked="" type="checkbox"/> 분사(Spray) <input type="checkbox"/> 후유화성 (P/E) <input type="checkbox"/> 솔질(Brush) <input checked="" type="checkbox"/> 용제제거성(S/R) <input type="checkbox"/> 침적(Immerse)		세척제(Remover) 제조사(Maker): NAWOO 형식(Model): NPR-1-3 제조번호(Batch No.): 05NPR06 종류(Type): 적용방법(Application) <input checked="" type="checkbox"/> 용제(Solvent) <input checked="" type="checkbox"/> 닦음(Wiping) <input type="checkbox"/> 물 (Water) <input type="checkbox"/> 분사(Water Spray) <input type="checkbox"/> 침적(Water Immerse)		현상제(Developer) 제조사(Maker): NAWOO 형식(Model): NPD-4 제조번호(Batch No.): 05NPD06 종류(Type): 적용방법(Application) <input type="checkbox"/> 건식(Dry) <input checked="" type="checkbox"/> 분사(Spray) <input type="checkbox"/> 습식(Aqueous) <input type="checkbox"/> 솔질(Brush) <input checked="" type="checkbox"/> 속건식(Nonaqueous) <input type="checkbox"/> 침적(Immerse)
침투시간(Dwell Time): 10 분(Min.)		현상시간(Bleed-out Time): 20 분(Min.)		
자 외 선 등 Black Light	형식 Model	N/A	육안관찰등 Visible Light	형식 Model
	일련번호 Serial No	N/A	<input type="checkbox"/> 주변등 Ambient Light <input checked="" type="checkbox"/> 보조등 Glow Lamp	일련번호 Serial No.
	강도 Intensity	N/A <i>W/cm²</i>		강도 Intensity
				1200 Lux
적용규격 Code/Standard/Spec.	ASME B16.34 APPENDIX III / GTS-QP-PA-02 Rev.4		검사시기 Examination Time	<input type="checkbox"/> 열처리 전(Before PWHT) <input checked="" type="checkbox"/> 열처리 후(After PWHT)
총검사수량 Examination Q'ty	30 SETS		검사결과 Results	<input checked="" type="checkbox"/> 합격 (Accept) <input type="checkbox"/> 불합격 (Reject)
도면 Sketch				
 				
<div style="display: flex; justify-content: space-between;"> <div> <p>검 사 자 Examined & Interpreted by</p> <p>LEVEL II <u>M. S. YUN</u></p> <p>책 임 자 Approved by</p> <p>LEVEL III <u>Y. C. CHIN</u></p> </div> <div> <p><input type="checkbox"/> Witnessed by</p> <p><input type="checkbox"/> Reviewed by</p> <p>   </p> </div> </div>				



침투탐상검사보고서

Report of Liquid Penetrant Examination

650-8 1-dong Sangnok-gu Ansan-si Gyeonggi-do, Korea
경기도 안산시 상록구 이동 650-8 TEL: 031) 433-3861~2. FAX: 031) 433-3863

Report No.

G10P-KVT-0006-01

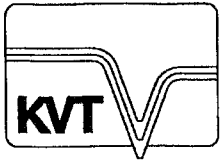
쪽 번호
Page No.

2 of 2

검사일자	Date of
------	---------

2010. 05. 27

Fluid Flow & Valves Spec
Q.A DEPT
REVIEWED BY
Reviewer: *[Signature]*
Date: 6/17/18
K&L VALVE TECHNOLOGIES



INSPECTION REPORT

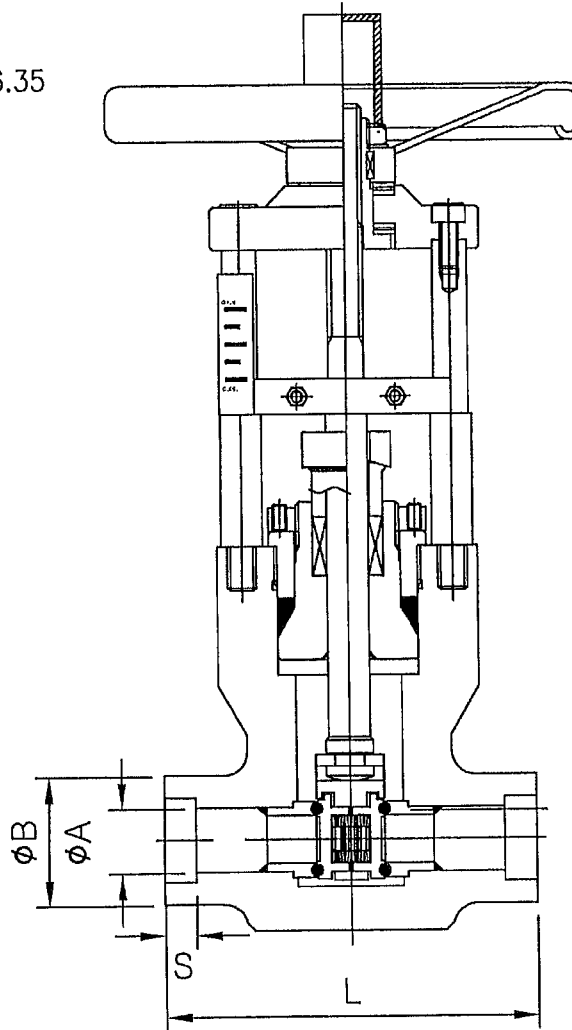
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REV. NO. : 0

PAGE 10 OF 11

☐ 외 형 도 (OUTLINE DIMENSION)

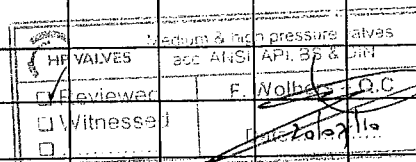
P.S.G. V/V 1"-CL2500 SW Sch. 33.4x6.35
(S)A182-F91 5EA MANUAL



☐ 치 수 검 사 (DIMENSION INSPECTION)

UNIT:mm

구 분 (DIVISION)	L ±1.5	ØA ± 0.3	ØB ± 0.3	S								
STANDARD	165	26.3	33.8	12.7								
SN1000024	165.0	26.4	33.8	12.7								
SN1000025	165.2	26.3	33.7	12.7								
SN1000026	165.1	26.5	33.9	12.7								
SN1000027	165.1	26.3	33.8	12.7								
SN1000028	165.4	26.3	33.8	12.7								



REMARK

1. DIMENSION CHECK

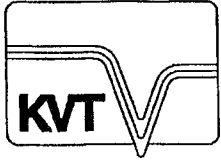
☒ SAMPLING CHECK

☐ 100% CHECK

PRE'D BY (QA.ENG'R)

VER'D BY (QA.MANAGER)

KEY VALVE TECHNOLOGIES LTD.



INSPECTION REPORT

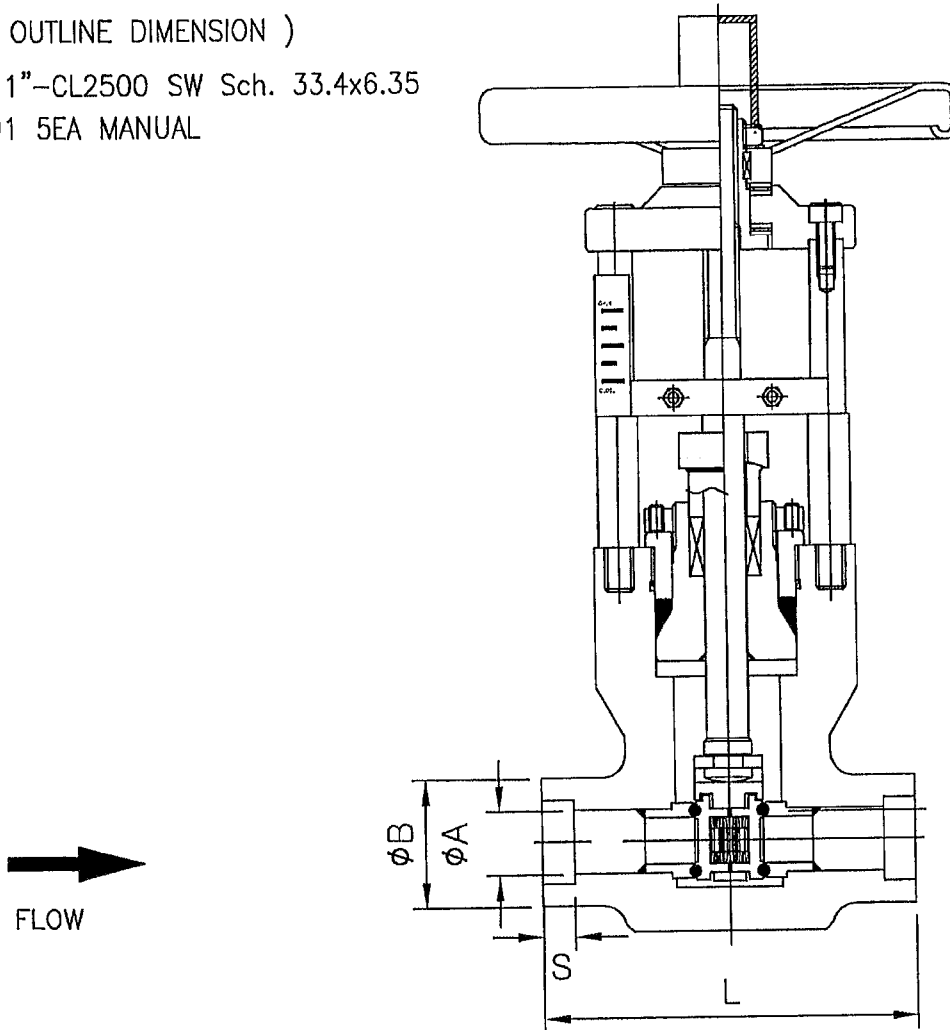
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REV. NO. : 0

PAGE 11 OF 11

☐ 외 형 도 (OUTLINE DIMENSION)

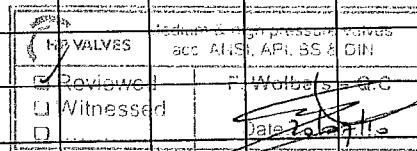
P.S.G. V/V 1"-CL2500 SW Sch. 33.4x6.35
(S)A182-F91 5EA MANUAL



☐ 치 수 검 사 (DIMENSION INSPECTION)

UNIT:mm

구 분 (DIVISION)	L ±1.5	φA ± 0.3	φB ± 0.3	S									
STANDARD	165	26.3	33.8	12.7									
SN1000029	165.3	26.4	33.9	12.7									
SN1000030	165.2	26.3	33.8	12.7									
SN1000031	165.3	26.4	33.8	12.7									
SN1000032	165.1	26.3	33.9	12.7									
SN1000033	165.1	26.3	33.7	12.7									



REMARK

1. DIMENSION CHECK

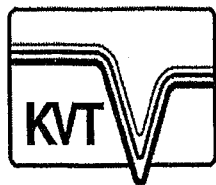
☒ SAMPLING CHECK

☐ 100% CHECK

PRE'D BY (QA.ENG'R)

VER'D BY (QA.MANAGER)

KEY VALVE TECHNOLOGIES LTD.

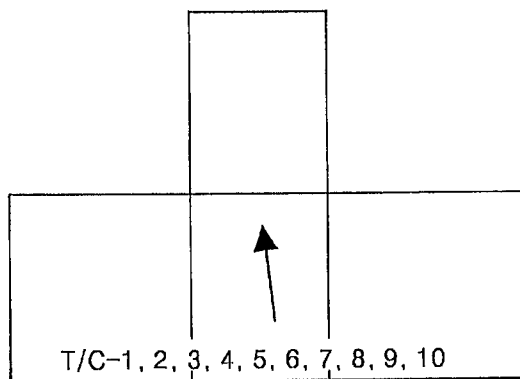


PREHEAT TREATMENT CERTIFICATE

PAGE: 1 OF 3

PROJECT NAME	Yajvinskaya CAPP	CERT NO.	PW - 0006 - 02
CLIENT	HP VALVES	MATERIAL	(S)A182-F91
HEATING RATE	SPEC: N/A °C/HR ACTUAL: N/A °C/HR	COOLING RATE	SPEC: N/A °C/HR ACTUAL: N/A °C/HR
HOLDING TEMP	SPEC: Min. 205°C ACTUAL: 240~245 °C	HOLDING TIME	SPEC: N/A HR ACTUAL: 1 H 10 M
HEAT SOURCE	<input type="checkbox"/> HEATING TORCH <input checked="" type="checkbox"/> ELECTRIC ELEMENT		
DATE	2010. 05. 06	START TIME :	AM 09 : 30

THERMOCOUPLE (T/C) LOCATION



SN1000024~33 (10ea)

1"-CL2500

Heat No.: A03669

THERMOCOUPLES NO

APPLICATION COLORS

T/C-1	●	T/C-7	●
T/C-2	●	T/C-8	●
T/C-3	●	T/C-9	○
T/C-4	●	T/C-10	●
T/C-5	●		
T/C-6	●		

REMARK:

HP VALVES P.S.G.V(SEAT)
(1" X CL2500 X 20mm: 10 Sets)

HP VALVES	Medium & high pressure valves acc. ANSI, API, BS & DIN
<input checked="" type="checkbox"/> Reviewed	<input checked="" type="checkbox"/> Witnessed
<i>[Signature]</i>	

Pre'd by

[Signature]

Rev'd by

Approved by

[Signature]



P.W.H.T CERTIFICATE

CERT NO: PW - 0006 - 02

DATE : 2010. 05.06

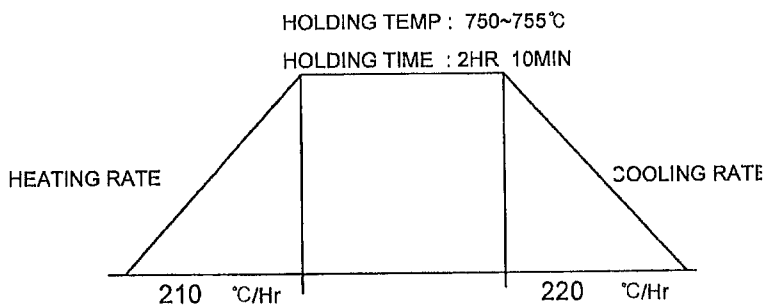
PAGE : 2 OF 3

PROJECT		Yajvinskaya CCPP	CLIENT	HP VALVES	MATERIAL	(S)A182-F91
NO	DESCRIPTION		THERMOCOUPLES NO.		SIZE x THK	
1	Parallel Slide Gate Valve		T/C - 1		1" x20mm	
2	Parallel Slide Gate Valve		T/C - 2		1" x20mm	
3	Parallel Slide Gate Valve		T/C - 3		1" x20mm	
4	Parallel Slide Gate Valve		T/C - 4		1" x20mm	
5	Parallel Slide Gate Valve		T/C - 5		1" x20mm	
6	Parallel Slide Gate Valve		T/C - 6		1" x20mm	
7	Parallel Slide Gate Valve		T/C - 7		1" x20mm	
8	Parallel Slide Gate Valve		T/C - 8		1" x20mm	
9	Parallel Slide Gate Valve		T/C - 9		1" x20mm	
10	Parallel Slide Gate Valve		T/C - 10		1" x20mm	

HEAT TREATMENT CONDITION

CONDITION	SPEC	ACTUAL	SOAKING SKETCH AND LOCATION OF THERMOCOUPLES	THERMOCOUPLES NO					
LOADING TEMP (°C)	-	245	* See preheat treatment certificate Thermocouples location	APPLICATION COLORS					
HEATING RATE (°C/Hr)	Max.222	210		T/C-1	●		T/C-7	●	
HOLDING TEMP (°C)	700~760	750~755		T/C-2	●		T/C-8	●	
HOLDING TIME (HR)	Min. 1H	2H 10M		T/C-3	●		T/C-9	○	
COOLING RATE (°C/Hr)	Max.280	220		T/C-4	●		T/C-10	●	
UNLOADING TEMP (°C)	-	260		T/C-5	●				
HEAT SOURCE	ELECTRIC			T/C-6	●				
TEMP. MEASURING EQUIPMENT NO.	T95CK048								

SKETCH WITH DIAGRAM



REMARKS:

HP VALVES	Medium & high pressure valves acc. ANSI, API, BS & DIN
<input checked="" type="checkbox"/> Reviewed	F. Wolberts - Q.C.
<input type="checkbox"/> Witnessed	Date: 2010/05/06

Pre'd by

Rev'd by

Approved by

Div-0006-02

3 of 3

